

## CLAIMS

1. A powdered material, the binder phase of which consisting of a cement-based system that has the capacity following saturation with a liquid reacting with the binder phase to hydrate to a chemically bonded ceramic material, characterised in that it is in the form of granules of powder particles, which granules exhibit a degree of compaction above 55 % and a mean size of 30 – 250  $\mu\text{m}$ .
2. A powdered material according to claim 1, characterised in that said granules exhibit a degree of compaction above 60 %, preferably above 65 % and even more preferred above 70 %.
3. A powdered material according to claim 1 or 2, characterised in that said granules exhibit a mean size of at least 50  $\mu\text{m}$ , preferably at least 70  $\mu\text{m}$ , but 200  $\mu\text{m}$  at the most, preferably 150  $\mu\text{m}$  at the most.
4. A powdered material according to any one of the preceding claims, characterised in that said powder particles exhibit a maximal particle size less than 20  $\mu\text{m}$ , preferably less than 10  $\mu\text{m}$ .
5. A powdered material according to any one of the preceding claims, characterised in that the cement-based system comprises cement in the group that consists of aluminates, silicates, phosphates, sulphates and combinations thereof, preferably having cations in the group that consists of Ca, Sr and Ba.
6. A powdered material according to any one of the preceding claims, characterised in that the granules also comprise up to 50 %, preferably 10-40 % and even more preferred 20-35 % of one or more additives that exhibit a refractive index in visible light that deviates 15 % at the most, preferably 10 % at the most and even more preferred 5 % at the most from the refractive index of the hydrated binder phase.
7. A powdered material according to claim 6, characterised in that said additive consists of glass particles, preferably particles of silicate glass, said additive preferably containing an atom type with a density above 5  $\text{g/cm}^3$ ,

preferably heavy metals from V and upwards in the periodic system and even more preferred Ba, Sr, Zr, La, Eu, Ta and/or Zn.

- 5 8. A powdered material according to claim 6, characterised in that said additives comprise a glass phase that exhibits the capacity following saturation with a liquid reacting with the binder phase to hydrate to a chemically bonded ceramic material.
- 10 9. A powdered material according to any one of the preceding claims, characterised in that said granules exist in a composition that comprises up to 50 %, preferably 5-30 % and even more preferred 10-20 % non pre-compacted powdered material, preferably of the same cement-based system as the powdered material in the granules.
- 15 10. A powdered material according to claim 9, characterised in that the non pre-compacted powdered material exhibits a maximal particle size smaller than 20  $\mu\text{m}$ , preferably smaller than 15  $\mu\text{m}$  and even more preferred smaller than 10  $\mu\text{m}$ .
- 20 11. A powdered material according to claim 9, characterised in that the non pre-compacted powdered material comprise up to 40 %, preferably 5-30 % and even more preferred 10-20 % of a filler material, preferably a filler material in the form of plates, fibres or whiskers, that increases the strength and preferably exhibits a refractive index in visible light that deviates 15 % at the most, preferably 10 % at the most and even more preferred 5 % at the most from  
25 the refractive index of the hydrated binder phase.
- 30 12. A raw compact, characterised in that it is composed of a powdered material according to any one of the preceding claims and in that it has an average degree of compaction above 55 %, preferably above 60 %, even more preferred above 65 % and most preferred above 70 %.
- 35 13. Method in connection with the manufacturing of a ceramic material from a powdered material, the binder phase of which consisting of a cement-based system that has the capacity following saturation with a liquid reacting with the binder phase to hydrate to a chemically bonded ceramic material, characterised in that said powdered material is compacted to a degree of

compaction above 55 %, where after it is finely divided into granules of powder particles, which granules exhibit a mean size of 30 - 250  $\mu\text{m}$ .

- 5           14.    Method according to claim 13, characterised in that the powdered material is a powdered material according to any one of claims 1-11.
- 10           15.    Method according to claim 13, characterised in that said granules are mixed with up to 50 %, preferably 5-30 % and even more preferred 10-20 % non pre-compacted powdered material of the same cement-based system as the powdered material in the granules.
- 15           16.    Method according to any one of claims 13-15, characterised in that the material is compacted to a raw compact that exhibits an average degree of compaction above 55 %, preferably above 60 %, even more preferred above 65 % and most preferred above 70 %.
- 20           17.    Method according to any one of claims 13-15, characterised in that the material is suspended in a liquid that reacts with the binder phase, where after the resulting suspension/paste is drained and compacted before the material is allowed to harden by reaction between the binder phase and any liquid remaining, which compaction is preferably done to a degree of compaction above 55 %, preferably above 60 %, even more preferred above 65 % and most preferred above 70 %.
- 25           18.    Method according to any one of claims 13-15, characterised in that a liquid that reacts with the binder phase is distributed in said granules, where after a resulting paste is applied in a space that is to be filled with the ceramic material.
- 30           19.    Method according to claim 18, characterised in that the liquid is supplied to said granules, which are thereafter pressed together by rolling, kneading or hand pressing, to a paste that is applied by packing or squirting in the space that is to be filled with the ceramic material.
- 35           20.    Method according to any one of claims 13-19, characterised in that said liquid that reacts with the binder phase comprises water and accelerator,

dispersant and/or superplasticizer.

21      A device (10, 20) for storing a powdered material and for mixing it with a  
liquid, characterised in that said device comprises a first chamber (1) that  
5      holds granules according to any one of claims 1-11, and a second chamber (2)  
that holds said liquid reacting with the binder phase, and an openable seal (3, 6)  
between the chambers (1, 2).

22.      A device according to claim 21, characterised in that there is a greater  
10      pressure in the second chamber (2) than in the first chamber (1).

23.      A device according to claims 21 or 22, characterised in that at least  
the first chamber (1) has walls (4) of a wall material that allows for processing of  
the powdered material through the walls (4).

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